

Serial No.: 09/964,840
Amendment Dated: December 29, 2003
Reply to Office Action: September 29, 2003
Attorney Docket No. 225/50450

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1. (Cancelled)

Claim 2. (Currently Amended) A power supply according to Claim [[1,]] 14, wherein the auxiliary power unit further comprises one of a dc/dc-converter, an ac/dc-converter and an electric control for supplying electric energy to one of electric loads and an electric storage means of the vehicle when the engine is inoperative.

Claim 3. (Currently Amended) A power supply according to Claim [[1,]] 14, wherein the electrolyzer comprises a reversible fuel cell, which is operable in both an electrolyzer mode and a fuel cell mode.

Claim 4. (Currently Amended) A power supply according to Claim [[1,]] 14, wherein the water supply comprises a condenser for separating water from a fuel cell exhaust.

Claim 5. (Currently Amended) A power supply according to Claim [[1,]] 14, wherein the water supply comprises one of a water buffer tank and a vehicle water tank for separating water from a fuel cell exhaust.

Claim 6. (Currently Amended) A power supply according to Claim [[1,]] 14, wherein the electrolyzer is a high pressure electrolyzer operated at a pressure above 100 bar.

Claim 7. (Currently Amended) A power supply according to Claim [[1,]] 14, wherein the hydrogen storage tank is a high pressure storage [[tank]] device operated at a pressure of approximately 400 bar.

Claim 8. (Original) A power supply according to Claim 5, further comprising a purification device disposed between the water buffer tank and the electrolyzer.

Claim 9. (Currently Amended) A power supply according to Claim [[1,]] 14, wherein the electrolyzer further comprises an oxygen storage tank.

Claim 10. (Currently Amended) A power supply according to Claim [[1,]] 14, further comprising a compressor arranged between said electrolyzer and said hydrogen storage.

Claim 11. (Previously presented) A method for operating a power supply for an auxiliary power unit of a vehicle having a combustion engine that drives an electric generator, which power supply has a fuel cell; an electrolyzer coupled to receive electric power from said electric generator, for generating hydrogen and oxygen from water; a hydrogen storage device connected to the electrolyzer for storing hydrogen produced by the electrolyzer, and connected to supply hydrogen to the fuel cell; and a water supply for supplying water to the electrolyzer; said method comprising:

said electrolyzer using electricity generated by said electric generator to produce hydrogen while the vehicle's engine is operative;

storing produced hydrogen in a pressurized storage container; and

feeding said hydrogen to said fuel cell for producing electric power while the engine is inoperative.

Claim 12. (Previously Presented) A method according to Claim 10, wherein the hydrogen is stored in a hydrogen storage tank at a pressure of approximately 400 bar.

Serial No.: 09/964,840
Amendment Dated: December 29, 2003
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Attorney Docket No. 225/50450

Claim 13. (Previously Presented) A method according to Claim 10, wherein water is fed to the electrolyzer by one of collecting water from the fuel cell exhaust and by collecting water from the combustion engine's exhaust.

Claim 14. (Currently Amended) A vehicle comprising:

an electric generator;

a combustion engine which drives said electric generator; and

an auxiliary power unit which includes

an electrolyzer [[means]] coupled to receive electricity generated by said electric generator when said combustion engine is running, for using said electricity from said electric generator to generate hydrogen and oxygen from water;

a water supply for supplying water to the electrolyzer means;

a hydrogen storage device connected to the electrolyzer for storing hydrogen produced by the electrolyzer ~~means~~, and connected to supply hydrogen to the fuel cell; and

Serial No.: 09/964,840
Amendment Dated: December 29, 2003
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Attorney Docket No. 225/50450

fuel cell means for supplying electric power to load elements of said vehicle using stored hydrogen produced by said electrolyzer ~~means~~ during operation of said combustion engine.

Claim 15. (Currently Amended) A power supply for a vehicle, comprising:

an electric generator driven by a combustion engine of said vehicle;

a fuel cell having a hydrogen input, an oxygen input and an exhaust output;

an electrolyzer ~~configured~~ coupled to receive electricity generated by said electric generator when said combustion engine is running, to generate hydrogen and oxygen by electrolysis of water powered by said electricity received from said electric generator;

a hydrogen storage device connected to the electrolyzer for storing hydrogen produced by the electrolyzer, and connected to supply hydrogen to the fuel cell; and

a water supply for supplying water to the electrolyzer.

Serial No.: 09/964,840
Amendment Dated: December 29, 2003
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Attorney Docket No. 225/50450

Claim 16. (Previously Presented) A method for operating an electric system of a vehicle having an electric generator that is driven by a combustion engine of said vehicle, which generator supplies electric power during operation of said combustion engine, said method comprising:

during operation of said combustion engine, using electric power from said electric generator to electrolyze water to produce hydrogen and oxygen;

storing at least said hydrogen that is produced by said electrolyzing of water during operation of said combustion engine;

during periods when said combustion engine is not in operation, supplying electric power to said electric system by feeding said stored hydrogen to a fuel cell to generate said electric power.